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NEW RECORDS AND SPECIES OF NEOTROPICAL BARK BEETLES (SCOLYTIDAE: COLEOPTERA). PART III¹

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While preparing a taxonomic review of the bark and ambrosia beetles (Scolytidae) of Costa Rica, it was necessary to examine all available species from this and neighboring areas. In order to make the names of new taxa available for this review and for related work, 12 species and two genera (*Paracorthylus* and *Gnathotrypanus*) new to science are described on the following pages. The new species represent the genera *Xyleborus* (3), *Monarthrum* (2), *Paracorthylus* (1), *Gnathotrypanus* (2), *Spermatophthorus* (1), *Scolytus* (2), and *Scolytopsis* (1). The type series of these species were collected in the following countries: Mexico (3), Costa Rica (4), and British Guiana (5).

Xyleborus longideclivis, n. sp.

This species superficially resembles *inconveniens* Schedl. except for the declivity which is more nearly like that of *parallelocollis* Eggers. The general outline of the pronotum and the arrangement of the asperities are much as in *solitarius* Schedl except marginal teeth are absent; the elytral declivity resembles that of *parallelocollis*, but it begins much nearer the base and is less strongly impressed on the lower third.

FEMALE.— Length 2.3 mm. (paratypes 2.2-2.3 mm.). 2.6 times as long as wide; color reddish brown, the declivity darker.

Frons weakly convex; surface reticulate, deeply, rather coarsely punctured; vestiture scanty.

Pronotum 1.04 times as long as wide; widest on basal third; basal angles broadly rounded, middle third of sides weakly arcuate and converging slightly toward the semicircularly rounded anterior margin; summit at or slightly behind summit; asperities rather small, abundant, extending almost to base at lateral margin; posterior area mostly smooth and shining with obscure traces of reticulation

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on disc, mostly reticulate laterally, the punctures small, obscure; vestiture inconspicuous.

Elytra 1.6 times as long as wide, 1.5 times as long as pronotum; sides almost straight and parallel on basal two-thirds, rather narrowly rounded behind; disc occupying basal fourth only; striae not impressed, the punctures small, shallow, distinct; interstriae smooth, shining, about three times as wide as striae, the punctures fine, obscure. Declivity occupying the posterior three-fourths, slope very gradual on basal half, somewhat steeper below, broadly convex; striae weakly impressed, the punctures twice as large as on disc, sharply, more deeply impressed; all interspaces weakly convex, about one and one-half times as wide as striae, not entirely smooth or shining, each with a median row of fine, closely set, squamiferous tubercles; lateral margin elevated from posterolateral angles of elytra on interspace 7 to apex of elytra, the elevation acute and irregularly armed by fine granules. Vestiture consisting of uniseriate rows of erect interstitial scales and fine, semirecumbent, strial hair; hair and scales subequal in length, slightly longer near base of declivity; each scale near middle of declivity equal in length to about two-thirds of the distance between rows of scales, separated from scales in the same row by distances equal to their own lengths.

TYPE LOCALITY.—Bartica triangle, British Guiana.

HOST.—*Talisia* sp.

TYPE MATERIAL.—The female holotype and eight female paratypes were collected at the type locality between October 1948 and March 1949, from the above host, as collection number six, by A. D. Atkinson.

The holotype and most of the paratypes are in the British Museum (Natural History); the remaining paratypes are in my collection.

Xyleborus parcellus, n. sp.

This species is allied to *longideclivis*, described above, but it is easily distinguished by the much smaller size and by the shorter declivity. In size and certain other characters it resembles *inter-setosus* Blandford, but the declivital sculpture and vestiture are very different.

FEMALE.—Length 1.7 mm. (paratypes 1.6-1.7 mm.), 3.0 times as long as wide; color brown.

Frons as in *longideclivis*.

Pronotum 1.2 times as long as wide; widest on basal third, sides feebly arcuate and very slightly converging on middle third, rather narrowly rounded in front; summit at middle, narrowly elevated; sculpture about as in *longideclivis* except asperities not extending to posterior fourth laterally; vestiture inconspicuous.

Elytra 1.7 times as long as wide, 1.5 times as long as pronotum; outline as in *longideclivis*; disc about one-third length of elytra; striae 1 feebly, others not impressed, the punctures small, distinctly impressed; interstriae smooth and shining, about three times as wide

as striae, the punctures slightly smaller than those of striae. Declivity beginning one-third elytral length from base, very gradual on upper or anterior half, becoming moderately steep below, convex; stria punctures larger and perhaps deeper than on disc; all interstriae uniseriately tuberculate, those on upper half minute, becoming larger and sharply pointed below, less closely placed near apex; lateral margin similarly, but less acutely elevated than in *longideclivus*. Vestiture consisting of minute stria hair and longer, erect, slender interstitial scales; each scale about six times as long as wide, separated from adjacent scales in same and neighboring rows by distances equal to length of a scale.

TYPE LOCALITY.— Bartica triangle, British Guiana.

HOSTS.— *Kairiballi* sp. (type), *Eschweilera sagotianum* and *Eperua falcata* (paratypes).

TYPE MATERIAL.— The female holotype was collected at the type locality between January and March 1949, from the above host, by D. B. Fanshawe. Two paratypes from British Guiana were taken in October 1948, to March 1949, by A. D. Atkinson as follows: one from Ikuribisi, from the second host listed, collection number 63, and one from mile 21 on the Bartica Potaro Road, from the last host listed, collection number 26.

The holotype and one paratype are in the British Museum (Natural History); the other paratype is in my collection.

Xyleborus usticius, n. sp.

The body form and general sculpture of pronotum and elytra superficially are very similar to those of *destruens* Blandford; however, its true affinity appears to be much closer to *parallelocollis* Eggers, although the size and declivital sculpture are rather different. From *parallelocollis* it is distinguished by the larger size, by the stouter body form, by the more broadly rounded posterior outline, by the steeper, broader, more strongly flattened declivity, by the impressed declivital striae, and by the larger declivital tubercles.

FEMALE.— Length 3.2 mm. (paratypes 3.2 mm.), 2.4 times as long as wide; color very dark brown.

Frons transversely convex and longitudinally without arch to well above eyes, the median line slightly higher; a rather narrowly impressed line just above epistoma; surface reticulate above eyes becoming almost smooth below with rather coarse, obscure punctures; vestiture inconspicuous.

Pronotum 1.06 times as long as wide; subquadrate, widest just behind middle, sides moderately arcuate, anterior and posterior margins less strongly arcuate; summit well developed, at middle; anterior area finely asperate; posterior area subreticulate, the punctures minute, rather deep; vestiture confined to lateral margins.

Elytra 1.4 times as long as wide, 1.4 times as long as pronotum; sides straight and diverging slightly on slightly more than basal half, broadly rounded behind; striae 1 moderately, others weakly impressed, the punctures small, close, rather deeply impressed; inter-

striae about twice as wide as striae, subshining, not entirely smooth, the punctures very fine, uniseriate, except irregular in size and position on interspace 1, with margins of some of them appearing very minutely granulate. Declivity beginning at or slightly in front of middle, gradual on anterior half, steeper behind, transversely impressed just before apex; striae more strongly impressed and punctures larger than on disc, the inner floor of some punctures subreticulate; striae 1, 2, and 3 near apex strongly curved toward suture; interstriae equally, weakly convex, each armed by a uniseriate row of closely placed, fine, pointed tubercles. Vestiture evidently abraded, consisting of rows of stout interstitial bristles on side and declivity.

TYPE LOCALITY.— Bartica District, British Guiana.

TYPE MATERIAL.— The female holotype and one female paratype were collected at the type locality in April, 1957, by E. A. J. Duffy.

The holotype is in the British Museum (Natural History); the paratype is in my collection.

Monarthrum bicolor, n. sp.

Fig. 1

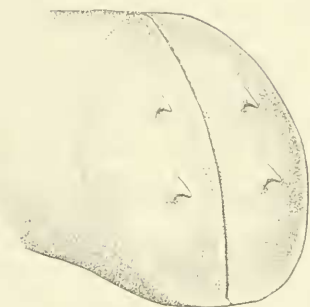
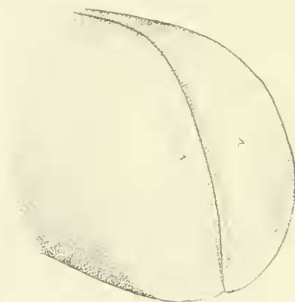
This species superficially resembles several of the larger representatives of the genus, but differs in having the elytral apex entire, not emarginate. The elytral declivity is rather similar to certain species of *Ips*. The sharply defined color pattern is also unusual.

MALE.— Length 2.7 mm. (paratypes 2.7-3.0 mm.), 2.5 times as long as wide; color yellowish brown with black markings on asperate area and median third of pronotum to base and on sides and posterior half of elytra; excavated area of declivity also brown except along suture.

Frons broadly convex above eyes, transversely impressed between upper level of eyes and epistomal process; epistomal process broad, weakly elevated and extended orad to almost overlap epistomal margin at center, its lower margin abrupt and bearing a sparse brush of hair; surface smooth, with numerous minute points and coarse, deep punctures above eyes, coarsely reticulate and very obscurely punctured below; a fine median tubercle at upper level of eyes. Antennal club 1.7 times as long as wide, asymmetrical; sutures 1 and 2 evident and septate only on lateral third.

Pronotum 1.1 times as long as wide; sides straight and parallel on basal half, somewhat narrowly rounded in front; anterior area rather coarsely asperate, more finely near summit, with minutely elevated, transverse lines continuing to base behind summit; posterior areas reticulate, very finely, shallowly punctured, the punctures transversely asperate on median third; glabrous.

Elytra 1.4 times as long as wide, 1.3 times as long as pronotum; sides very feebly diverging to one-third from base, then very weakly converging almost to apex, the posterolateral angles strongly rounded, broadly rounded behind; striae and interstitial punctures rather

1. *M. bicolor* ♂2. *M. preclarus* ♂5. *P. velutinus* ♂3a. *P. velutinus* ♂4. *P. velutinus* ♀3b. *P. velutinus* ♂6. *P. velutinus* ♀7. *G. terebratus* ♂8. *G. terebratus* ♂

Figs. 1-4. Posterolateral aspect of declivity: 1, *Monarthrum bicolor*, male; 2, *M. preclarus*, male; 3, *Paracorthylus velutinus*, male; 4, *P. velutinus*, female.

Figs. 5-6. Anterior aspect of antenna of *Paracorthylus velutinus*: 5, male; 6, female.

Figs. 7-8. *Gnathotrypanus terebratus*: 7, dorsal aspect of male; 8, anterior aspect of male antenna.

small, deep, confused; surface shining, with rather numerous, minute points. Declivity acutely margined to sutural apex except at sutural interspace above; upper half armed by three pairs of teeth spaced almost equally, the first about in line with interspace 2, acutely pointed, the second about in line with interspace 4, slightly larger but similar to the first, the third, higher but much less acutely pointed. its lower margin continued as a declining crest to sutural apex; excavated area very similar to *Ips*, broadly, deeply, excavated, the sutures slightly elevated and feebly granulate, the surface smooth, shining, the punctures rather large, shallow, not close. Vestiture confined to declivity, consisting of fine hair strongly diverging from suture, the sutural row rather conspicuous.

FEMALE.— Similar to male except frontal area more nearly reticulate; antennal club 1.3 times as long as wide, bearing a tuft of dark setae on posterior face; elytral declivity not excavated, broadly impressed much as in male, the submarginal area armed by three pairs of fine tubercles.

TYPE LOCALITY.— Mile 10 on the Bartica-Potaro Road, British Guiana.

HOST.—*Caryocar nuciferum*.

TYPE MATERIAL.—The male holotype, female allotype, and four male paratypes were collected at the type locality between October 1948 and March 1949, from the above host, by D. J. Atkinson, collection number 67.

The holotype, allotype and two paratypes are in the British Museum (Natural History); the other two paratypes are in my collection.

Monarthrum preclarus, n. sp.

Fig. 2

This species has two pairs of declivital teeth on the elytra having an arrangement different from those of all other representatives of the genus known to me. This feature, at least superficially, is very similar to the declivity of *Tricolus spectabilis* Wood or, to a lesser extent, *T. speciosus* Schedl.

MALE.— Length 2.5 mm. (paratype 2.5 mm.), 2.8 times as long as wide; color yellowish brown, the anterior third of pronotum and all except central area on disc of elytra medium brown.

Frons uniformly, rather strongly convex except narrowly impressed at epistomal margin; surface uniformly reticulate-granulate, the punctures very obscure; vestiture confined to epistomal margin.

Pronotum 1.4 times as long as wide; widest at base, sides almost straight and converging slightly on basal two-thirds, then converging rapidly, the anterior margin broadly rounded on median half; declivous on anterior fourth; asperities on anterior third low, abundant, somewhat resembling scales near summit; posterior areas reticulate to subreticulate, the punctures minute, very indistinct; glabrous.

Elytra 1.6 times as long as wide, 1.2 times as long as pronotum; sides straight and parallel on basal third, converging very slightly to

level of sutural apex, then abruptly rounded, very broadly, shallowly emarginate on median half with a narrow, rather deep notch at suture; stria punctures minute, shallow, those of interspaces evidently smaller and less definite in position but rows indicated in some areas; surface smooth, shining. Declivity oblique, excavated; acutely margined beginning with a pair of small, acutely pointed teeth on an elevated base in line with interspace 2 at top of declivity, the subacutely elevated lateral margin continuing to middle of declivity and armed here by a similar pair of small, acutely pointed teeth curving slightly toward middle of declivity; lateral margin continuing from base of second tooth to apex; apex rounded in dorsal profile, its margin continuous with sutural apex; declivital face deeply, broadly excavated, the suture very slightly elevated, the surface smooth, and shining, with fine, shallow punctures. Glabrous, except a few setae on sides.

TYPE LOCALITY.— Manaka, British Guiana.

HOST.— *Peltogyne* sp.

TYPE MATERIAL.— The male holotype and one male paratype were collected at the type locality, from the above host, between October 1948, and March 1949, by D. J. Atkinson, collection number 16.

The holotype is in the British Museum (Natural History), the paratype is in my collection.

Paracorthylus, n. g.

This genus bears a superficial resemblance to *Metacorthylus* Blandford, but the antennae and other characters indicate the relationship is remote. It is not closely related to any known genus, but should be placed near *Glochinerus* Blandford, *Corthycyclon* Schedl. and *Metacorthylus*. The very unique antennae, serve to distinguish this genus.

DESCRIPTION.— Frons convex in both sexes; eye two-thirds divided by a narrow emargination; antennal funicle 2-segmented; antennal club elongate, with two procurved sutures on basal half, sexually dimorphic, strongly, asymmetrically, acuminate produced in female, moderately, not strongly, acuminate produced in male; posterior face of anterior tibiae not tuberculate; tarsi normal. Pronotum much as in *Corthylus*, finely, closely asperate on anterior third. Scutellum large, almost flat. Elytra subtruncate behind. On type-species pubescence minute, recumbent, rather dense on pronotum and elytra.

TYPE-SPECIES.— *Paracorthylus velutinus* Wood, described below.

Paracorthylus velutinus, n. sp.

Figs. 3-6

The sexually dimorphic antennae and armature of the elytral declivity, and the minute, recumbent vestiture serve to distinguish

this species from other species with which it might possibly be confused.

FEMALE.— Length 1.9 mm. (paratypes 1.9-2.0 mm.), 2.2 times as long as wide; color brown, the anterior and posterior extremities somewhat darker.

Frons rather weakly concave; slightly transversely impressed just above epistomal margin; epistomal margin produced into a small lobe in front of mandibles; an acute median carina on lower half extending to apex of epistomal lobe; surface shining, marked by small points and moderately large, close, deep punctures; vestiture erect, minute, inconspicuous. Eye almost two-thirds divided by a narrow emargination. Antennal funicle 2-segmented; club 2.6 times as long as wide, narrowly triangular, the apex acutely pointed; sutures 1 and 2 subangulately procurved, 2 not extending beyond basal third; mediobasal margin bearing a row of rather long hair, other setae minute.

Pronotum 1.1 times as long as wide; widest on basal half, sides on basal two-thirds feebly arcuate, rather broadly rounded in front; summit rather indefinite, about one-third pronotum length from anterior margin; very finely asperate anterior to summit, dull, very minutely reticulate-granulate behind. Vestiture consisting of rather abundant, minute, recumbent hair, somewhat longer and more nearly erect in asperate area.

Elytra 1.1 times as long as wide, 1.0 times as long as pronotum; sides almost straight and parallel to a point beyond level of declivital base, very broadly rounded behind; declivity restricted to posterior fourth; striae and interstriae punctures obsolete, surface of disc finely reticulate, dull, a very slight irregularity where small, confused punctures might have been. Declivity abrupt, very steep, weakly convex; surface obscurely, rather closely punctured, impressed toward suture on upper two-thirds; interspace 3 weakly elevated on upper half, with one blunt tubercle on summit just above middle of declivity. Vestiture minute, recumbent, rather abundant.

MALE.— Similar to female except frons more nearly convex, the carina shorter; antennal club shorter, broader, much less strongly acuminate; elytral disc near declivity more nearly shining, more clearly punctured; declivital interspace 3 armed by two moderately large, pointed tubercles, 1 one-third from upper margin, 2 slightly larger, two-thirds from upper margin; lower margin of declivity more distinctly elevated.

TYPE LOCALITY.— Moravia, Cartago Prov., Costa Rica.

TYPE MATERIAL.— The female holotype, male allotype and 17 paratypes were collected at the type locality on March 11, 1964, at an elevation of about 500 m., by S. L. Wood, from an unidentified, recently cut, dry log. The beetles were monogamous and wood boring. Each tunnel extended about 1-2 cm. directly into the wood. The beetles were completely inactive until physically disturbed.

The holotype, allotype and paratypes are in my collection.

Gnathotrypanus, n. g.

This genus is more closely related to *Gnathotrupes* Schedl than to other known genera, although its relationship to previously described species may appear obscure. It differs from *Gnathotrupes* by the deeply emarginate eye, by the entire elytral apex, and by the presence of only two sutures in the antennal club. In the type-species some of the setae on the elytral declivity are scalelike.

DESCRIPTION.— Frons convex in both sexes; eye about half divided by a broad emargination; antennal funicle 5-segmented; antennal club large, flattened, marked by two procurved sutures (both partly septate in type-species); elytral apex entire; anterior tibiae rather slender, armed by a series of teeth on outer margin and on posterior face by several additional tubercles.

TYPE-SPECIES.— *Gnathotrypanus terebratus* Wood, described below.

Gnathotrypanus terebratus, n. sp.

Figs. 7-8

This species bears a superficial resemblance to certain species of *Thysanoes*, but the eyes, antennae, anterior coxae and legs leave no doubt concerning its relationship to the *Corthylini*.

MALE.— Length 1.3 mm. (paratypes 1.30-1.45 mm.). 2.5 times as long as wide; color a moderately dark reddish brown, the pronotum lighter, more nearly yellowish brown.

Frons flattened to well above eyes on an area slightly less than distance between eyes, very feebly elevated toward a broad, low, median, longitudinal elevation; surface very obscurely reticulate with a few very coarse, deep punctures, except shining and impunctate on median elevation; vestiture inconspicuous. Eye half divided by an emargination. Antennal scape about as long as 5-segmented funicle, about half as long as club; club as long as wide, with two procurved, almost angulate sutures, 1 extending one-fourth from base, 2 extending slightly more than half club length from base, most of 1 and extreme margins of 2 septate.

Pronotum 1.1 times as long as wide; widest on basal half, the sides almost parallel, very feebly arcuate to just before middle, then distinctly converging to rather abrupt anterolateral angles, very broadly rounded, almost straight in front; anterior margin armed by about 14-16 low teeth; indefinite summit in front of middle, moderately declivous and finely asperate anterior to summit; posterior area minutely subreticulate, with an occasional minute puncture. A few hairlike setae in asperate area and on lateral areas.

Elytra 1.4 times as long as wide, 1.3 times as long as pronotum; sides almost straight and parallel on basal three-fourths, very broadly rounded behind; striae not impressed, the punctures minute, shallow; interstriae about three times as wide as striae, shining, marked by rather numerous lines, punctures not evident. Declivity steep, confined to posterior fourth of elytra; shallowly, subconcavely impressed on central two-thirds, except sutural area above impressed;

striae obsolete; declivital face closely, minutely marked by indefinite, confused punctures; position of interspace 2 near upper margin armed by a series of two or three small pointed tubercles, the third tubercle almost one-fourth of declivital length from base of declivity; apical, costal margin near suture finely, weakly, elevated. Vestiture confined to declivity, consisting of fine hair and erect scales in about equal numbers; rather sparse.

FEMALE.— Similar to male except frons very slightly more strongly convex; punctures and reticulation of pronotum more distinct; anterolateral margin of pronotum bearing a small tuft of yellow hair; anterior margin of pronotum more strongly rounded; elytral declivity more nearly convex, the impression feeble, the tubercles absent.

TYPE LOCALITY.— Volcan, Puntarenas Prov., Costa Rica.

HOST.— Known locally as "guarumo," evidently *Pourouma aspera*.

TYPE MATERIAL.— The male holotype, female allotype, and 24 paratypes were collected at the type locality on December 11, 1963, at an elevation of about 1,000 m., by S. L. Wood, from a recently cut bole of "guarumo" 20 cm. in diameter, in dense forest growth. The monogamous beetles were just entering the woody tissues of the host.

The holotype, allotype and paratypes are in my collection.

Gnathotrypanus electus, n. sp.

This species is allied to *terebratus*, described above, but may be readily distinguished by the larger size, by the presence of interstitial punctures, and by the sulcate elytral declivity that bears tubercles on the lower half. This species bears a superficial resemblance to certain species of *Neodryocoetes*.

FEMALE.— Length 2.4 mm., 2.4 times as long as wide; color reddish brown with elytra much darker.

Frons moderately convex, with median line rather narrowly elevated, particularly toward epistomal margin; surface dull, very finely, rather closely punctured; vestiture inconspicuous, antennal club with sutures more narrowly angulate than in *terebratus*.

Pronotum 1.1 times as long as wide; sides very feebly arcuate, almost parallel on basal half, rather broadly rounded in front; anterior margin not clearly armed, posterior area minutely reticulate, finely punctured. Subglabrous except at lateral and anterior margins; a moderately large patch of rather long, conspicuous, hairlike setae on anterolateral angle.

Elytra about 1.4 times as long as wide (elytra slightly spread), 1.2 times as long as pronotum; sides almost straight and evidently parallel on about basal three-fourths, very broadly rounded behind; striae not impressed, the punctures small, distinct, shallow; interstriae about three times as wide as striae, the surface shining, marked by lines and exceedingly minute points, and with the punctures

similar in size and spacing to those of striae. Declivity steep, sulcate; striae not indicated, the surface finely reticulate, with very obscure, confused, close punctures indicated; rather strongly impressed between third interspaces, the lateral elevations moderately abrupt, broad, armed by one, small, pointed tubercle near upper margin and four similar tubercles on middle third, the upper one of these four larger. Vestiture confined to declivity, consisting of fine, semirecumbent hair and a few erect, slender scales.

TYPE LOCALITY.—Rincon de Osa, Puntarenas Prov., Costa Rica.

TYPE MATERIAL.—The female holotype was collected at the type locality on August 11, 1967, at an elevation of about 30 m., by S. L. Wood, from the limb of an unidentified tree.

The holotype is in my collection.

Spermatophthorus aberrans, n. sp.

This species is placed in *Spermatophthorus* because of the antennal structure and the scalelike vestiture, but it is not closely related to either of the two previously described species. The very different sculpture of the frons, the reduced size of the head, and the general contour and sculpture of the pronotum and elytra are unique.

MALE.—Length 1.6 mm. (paratypes 1.4-1.7 mm.), 2.4 times as long as wide; color dark brown.

Frons above upper level of eyes convex, with a low median elevation; rather abruptly, strongly, broadly impressed at upper level of eyes, the subconcave area extending from eye to eye to epistomal margin; center of impressed area bearing a pointed tubercle; central part of each ventrolateral fourth of impressed area armed by a large, rounded, strongly developed process about twice as high as its basal width, directed cephalad and very slightly mesad; entire surface dull, above upper level of eyes also clearly reticulate and finely punctured; vestiture inconspicuous.

Pronotum 1.1 times as long as wide; sides almost straight and parallel on basal half, then rather abruptly rounded and continued straight to the very narrow, narrowly rounded anterior margin; anterior margin a continuous, unbroken elevated costa, one pair of low teeth at its ends; dorsal profile a continuous, gradual arch from anterior to posterior margins; isolated, small, crenulate asperities extend to basal margin, surface between asperities irregular, apparently with obscure, coarse reticulation. Vestiture consisting of moderately abundant, erect, slender scales.

Elytra 1.5 times as long as wide, 1.6 times as long as pronotum; sides almost straight and parallel on basal half, then converging gradually to the narrowly rounded posterior margin; striae 1 feebly, others not impressed, the punctures small, shallow, not close or clearly evident; interstriae perhaps three times as wide as striae, very irregular, minutely rather densely punctured, with median row of small, subvulcanate, squamiferous punctures. Declivity convex, rather steep; striae weakly impressed, the punctures more distinct;

interspace 2 strongly narrowed, abruptly, strongly impressed, obsolete before apex; interstrial tubercles slightly larger. Vestiture consisting of interstrial rows of rather slender, erect scales.

FEMALE.— Similar to male except frons weakly, uniformly convex to epistoma, the median elevation continued to epistomal margin with central tubercle minute, the lateral tubercles minute but evident.

TYPE LOCALITY.— Six km. south of San Vito, Puntarenus Prov., Costa Rica.

TYPE MATERIAL.—The male holotype, female allotype and 30 paratypes were collected at the type locality, between March 19 and 21, 1967, from a pear-shaped gall 3.5 by 4.5 cm. that was picked up on the forest floor by Carlos Valencio.

The holotype, allotype, and paratypes are in my collection.

Scolytus hermosus, n. sp.

Fig. 9

This species is similar to *robustus* Blackman, but is readily distinguished by the larger size, by the more finely punctured pronotum and elytra, by the brightly shining, very finely, densely punctured abdominal sterna, and by the somewhat less strongly elevated anterior margin of abdominal sternum 2.

MALE.— Length 3.7 mm. (paratypes 3.0-3.7 mm.), 2.1 times as long as wide; color black with dark reddish brown elytra.

Frons broadly, weakly convex to vertex, with slight transverse impressions just above eyes and just above epistoma; surface shining, rather coarsely punctate-aciculate; vestiture consisting of rather sparse, uniformly distributed, long, dark hair. Antennal club 1.7 times as long as wide; suture 1 distinct.

Pronotum as in *robustus* except punctures distinctly smaller.

Elytra essentially as in *robustus* except strial and interstrial punctures distinctly smaller; interstrial punctures minute, distinctly



9. *S. hermosus* ♂



10. *S. mundus* ♂

Figs. 9-10. Posterolateral aspect of abdominal sterna of *Scolytus* spp.: 9, *hermosus*; 10, *mundus*.

smaller than those of striae; posterior margin finely serrate on median third.

Abdominal sternum 2 with anterior margin about two-thirds as high as in *robustus*, the general contour otherwise similar to that species; surface of sterna 2 to 5 brightly shining, very finely, closely, deeply punctured; each puncture bearing a fine, semirecumbent, short hair about two to three times as long as diameter of a puncture.

FEMALE.— Similar to male except frons much more strongly convex; anterior margin of abdominal sternum 2 weakly elevated, the elevation about as high as thick.

TYPE LOCALITY.— Two km. north of the Puebla state line, 18 km. north of Tlaxco (Tlascalá), Puebla, Mexico.

HOST.— *Abies religiosa*.

TYPE MATERIAL.— The male holotype, female allotype and 22 paratypes were collected at the type locality on July 9, 1967, at an elevation of 2,900 m., by S. L. Wood, from fir slash larger than 10 cm. in diameter. The egg tunnels were transverse. These beetles were associated in the same slash with the following species.

The holotype, allotype and paratypes are in my collection.

Scolytus mundus, n. sp.

Fig. 10

This species is allied to *ventralis* Leconte, but is readily distinguished by the larger size, by the more finely punctured elytra, by the shining, much more coarsely punctured abdominal sterna, and by the larger spine (male) or tubercle (female) on the posterior margin of sternum 2.

MALE.— Length 4.5 mm. (paratypes 3.6-4.5 mm.), 2.3 times as long as wide; color black.

Frons moderately convex with a shallow, rather broad, median impression just above epistoma; surface longitudinally, rather coarsely punctate-aciculate, with a slight median longitudinal carina on middle third; vestiture of moderately abundant, uniformly distributed, fine, long hair; antennal club 2.0 times as long as wide; suture 1 obscurely indicated.

Pronotum essentially as in *ventralis*.

Elytra about as in *ventralis* except punctures smaller, deep; stria and interstria punctures about equal in size; posterior margin almost smooth, with a distinct shallow notch in line with interspace 3.

Abdominal sternum 2 abruptly declivous (about a 90 degree angle) but margin not projecting posteriorly; posterior median margin of 2 armed by a rather large, sharply pointed spine, its apex at suture, its anterior slope descending gradually to about middle of segment much as in *obelus* Wood; all sterna shining, rather finely, closely, deeply punctured; each puncture bearing a fine, long hair, each hair about equal in length to length of sternum 3.

FEMALE.— Similar to male except frons much more strongly convex, the impression obsolete, but with a small median impression

on vertex. surface much less strongly aciculate; abdominal sternum 2 more nearly convex, not as steeply declivous, the spine rudimentary (not entirely obsolete in any female at hand); abdominal vestiture abraded.

TYPE LOCALITY.— Two km. north of Puebla state line, 18 km. north of Tlaxco (Tlascala). Puebla, Mexico.

HOST.— *Abies religiosa*.

TYPE MATERIAL.— The male holotype, female allotype and 32 paratypes were collected at the type locality on July 9, 1967, at an elevation of 2,900 m., by S. L. Wood, from fir slash larger than 10 cm. in diameter. The egg tunnels were transverse and could not be distinguished from those of *hermosus*, above, with which they were associated.

Scolytopsis laticollis, n. sp.

This species is allied to *puncticollis* Blandford, but it is readily distinguished by the much smaller lateral punctures on the pronotum, by the narrowly, deeply impressed declivital interstriae, and, in the female, by the more nearly flattened, much more pubescent frons, with a more prominent median carina.

FEMALE.— Length 2.8 mm. (paratypes 2.5-3.1 mm.), 2.2 times as long as wide; color dark brown.

Frons broadly convex on upper two-thirds, transversely impressed below, epistomal margin rather abruptly elevated, shining; a narrow, rather strongly elevated median carina extending from upper level of eyes to epistomal elevation; surface coarsely, closely, deeply punctured; vestiture consisting of fine, rather long, moderately abundant, hairlike setae on a subtriangular area from epistoma to upper end of carina.

Pronotum 0.90 times as long as wide; widest just behind middle, sides rather strongly arcuate, converging somewhat on anterior half to the rather broadly rounded anterior margin; surface smooth and shining, with moderately abundant minute points and rather widely spaced, oval punctures of moderately large size, the punctures spaced on disc by about one to two times their own diameter except on median line, in lateral areas the punctures distinctly less than twice as large as on disc, the surface very obscurely reticulate. Glabrous.

Elytra 1.4 times as long as wide, 1.4 times as long as pronotum, slightly narrower than pronotum; sides moderately constricted one-fourth from base, then arcuate and converging on posterior half to broadly rounded posterior margin; striae narrowly, rather deeply impressed from just behind base to just before apex, the punctures rather small, distinct; interstriae at least twice as wide as striae, with punctures as large, deep and close as those of striae, the middle third of each interspace not impressed on basal fourth of elytra, gradually impressed with increasing depth posteriorly until equal to striae on posterior fourth; general surface shining, with moderately numerous minute points; apical margin elevated, subserrate. Vesti-

ture consisting of stout, short, interstitial setae, becoming almost hairlike on posterior fourth.

MALE.— Similar to female except frons modified as in males of related species but with longer setae; setae of elytral declivity more nearly scalelike.

TYPE LOCALITY.— Thirty-one km. southeast of Cameron, Oaxaca, Mexico.

TYPE MATERIAL.— The female holotype, male allotype and 13 paratypes were collected at the type locality on June 21, 1967, at an elevation near 1,300 m., by S. L. Wood, from cut limbs about 8 to 15 cm. in diameter. The biramous transverse egg tunnels engraved the wood; the larval mines were mostly in the phloem. The general appearance of the tunnels was very similar to that of many species of *Scolytus*. The specimens taken were dead remnants of a recent epidemic that infected several host trees, one of which appeared to be *Plumeria* sp.

The holotype, allotype and paratypes are in my collection.

Ips sabinianae (Hopping), n. comb.

Through an oversight *Orthotomicus sabinianae* Hopping (1963, Canadian Ent. 95:64), from California, was not formally transferred to the genus *Ips* when treating *Ips latidens* LeConte (Wood, 1966, Gt. Basin Nat. 26:24). These two species and *erosus* (Wollaston), from Europe, form a group intermediate between *Ips* (*s. str.*) and *Orthotomicus*. For several practical reasons, including the probable invalid status of *Orthotomicus*, this species group should be included in *Ips*.